

CRS Report for Congress

Received through the CRS Web

Navy Littoral Combat Ship (LCS): Background and Issues for Congress

Ronald O'Rourke
Specialist in National Defense
Foreign Affairs, Defense, and Trade Division

Summary

The Navy's proposed FY2007 budget requests \$521 million to procure two Littoral Combat Ships (LCSs). The House-reported version of the FY2007 defense appropriations bill (H.R. 5631) recommends approval of this request. The Senate-reported version recommends funding one LCS in FY2007 and rescinding funding for one of the three LCSs procured in FY2006. For a longer discussion of the LCS program, see CRS Report RL32109, *Navy DDG-1000 (DD(X)), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress*, by Ronald O'Rourke. This report will be updated as events warrant.

Background

The LCS is part of a proposed family of next-generation Navy surface combatants that also includes the much-larger DDG-1000 (formerly DD(X)) destroyer and CG(X) cruiser.¹ The LCS is a small, fast surface combatant that uses modular "plug-and-fight" mission payload packages, including unmanned vehicles (UVs). The primary intended missions of the LCS are countering enemy mines, submarines, and fast attack craft (i.e., "swarm boats") in heavily contested littoral (near-shore) waters. Secondary LCS missions include intelligence, surveillance, and reconnaissance (ISR); maritime intercept; special operations forces (SOF) support; and logistics support for movement of personnel and supplies. The LCS is also increasingly mentioned in connection with the Navy's role in the Global War on Terrorism (GWOT).²

¹ For more on the DDG-1000 and CG(X), see CRS Report RL32109, *Navy DDG-1000 (DD(X)), CG(X), and LCS Ship Acquisition Programs: Oversight Issues and Options for Congress*, by Ronald O'Rourke.

² For more on the Navy's role in the GWOT, see CRS Report RS22373, *Navy Role in Global War on Terrorism (GWOT) — Background and Issues for Congress*, by Ronald O'Rourke.

| Report Documentation Page | | | | Form Approved OMB No. 0704-0188 | |
|--|------------------------------------|-------------------------------------|--|--|---------------------------------|
| Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. | | | | | |
| 1. REPORT DATE 18 AUG 2006 | | 2. REPORT TYPE N/A | | 3. DATES COVERED - | |
| 4. TITLE AND SUBTITLE Navy Littoral Combat Ship (LCS): Background and Issues for Congress | | | | 5a. CONTRACT NUMBER | |
| | | | | 5b. GRANT NUMBER | |
| | | | | 5c. PROGRAM ELEMENT NUMBER | |
| 6. AUTHOR(S) | | | | 5d. PROJECT NUMBER | |
| | | | | 5e. TASK NUMBER | |
| | | | | 5f. WORK UNIT NUMBER | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Congressional Research Service The Library of Congress 101 Independence Ave. SE Washington, DC 20540-7500 | | | | 8. PERFORMING ORGANIZATION REPORT NUMBER | |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | | | | 10. SPONSOR/MONITOR'S ACRONYM(S) | |
| | | | | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) | |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited | | | | | |
| 13. SUPPLEMENTARY NOTES | | | | | |
| 14. ABSTRACT | | | | | |
| 15. SUBJECT TERMS | | | | | |
| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT SAR | 18. NUMBER OF PAGES 6 | 19a. NAME OF RESPONSIBLE PERSON |
| a. REPORT unclassified | b. ABSTRACT unclassified | c. THIS PAGE unclassified | | | |

The Navy wants to procure a total of 55 LCSs. The first was procured in FY2005, and three more were procured in FY2006. The Navy's FY2007-FY2011 shipbuilding plan includes two LCSs in FY2007, three in FY2008, and six per year in FY2009-FY2011. The Navy is procuring LCS mission packages through the Other Procurement, Navy (OPN) account rather than the SCN account. The Navy estimates that it might procure 90 to 110 mission packages. The Navy's proposed FY2007 budget requests \$521 million to procure two LCSs. Section 124 of the conference report on the FY2006 defense authorization act (H.R. 1815/P.L. 109-163 of January 6, 2006) limits the cost of the fifth and sixth LCSs — the two requested FY2007 ships — to \$220 million per ship, plus adjustments for inflation and other factors.

On May 27, 2004, the Navy awarded contracts to teams led Lockheed Martin and General Dynamics (GD) for final system design of two "Flight 0" versions of the LCS, with options for detailed design and construction of up to two LCSs each. The Lockheed team is building the FY2005 LCS and one of the FY2006 ships, while the GD team is building the other two FY2006 ships. The Navy wants to build LCSs to the two Flight 0 designs through at least FY2009 before deciding whether to shift to one or two modified Flight 1 designs. Lockheed is building its LCSs at Marinette Marine of Marinette, WI, and Bollinger Shipyards of Louisiana and Texas; GD is building its LCSs at Austal USA of Mobile, AL. These yards are not among the six yards that have built the Navy's major warships in recent years. **Table 1** shows LCS funding through FY2011. Using figures in **Table 1**, the LCS program might have a total acquisition (development plus procurement) cost of more than \$26 billion, or more than \$470 million per ship, in then-year dollars.

Issues for Congress

Increase In LCS Sea Frame Unit Procurement Cost. Estimated LCS sea frame unit procurement costs as shown in the FY2007 budget submission are substantially greater than figures shown in the FY2006 budget submission. The estimate for the first LCS has increased from \$212.5 million to \$274.5 million, an increase of about 29%. The estimate for the second LCS has increased from \$256.5 million to \$278.1 million, an increase of about 8%. As shown in **Table 2**, the estimate for follow-on ships to be procured in FY2009-FY2011, when the LCS program is to reach its maximum annual procurement rate of 6 ships per year, has increased from \$223.3 million in then-year dollars to \$298 million in then-year dollars, an increase of about 33%.

The Navy states that these differences are due mostly to the fact that the figures shown in last year's budget did not include items that are traditionally included in the total budgeted procurement cost of a Navy shipbuilding program, such as Navy program-management costs, an allowance for changes, and escalation (inflation). The absence of these costs from last year's LCS budget submission raises potential oversight issues for Congress, including the following:

- Why were these costs excluded from the LCS budget submission in last year's budget? If this was an oversight, was anyone held accountable? If this was not an oversight, then what was the reason?
- Do LCS procurement costs as presented in the FY2007 budget submission now include all costs that, under traditional budgeting practices, should be included in LCS procurement costs?

- What is the likelihood that the Navy in future budget submissions will substantially increase procurement cost estimates for other Navy shipbuilding programs to account for costs that were excluded from previous budgets? Does the Navy believe there is no substantial risk of being penalized for submitting to Congress a budget presentation for a shipbuilding program that, for whatever reason, significantly underestimates procurement costs?

Table 1. LCS Program Funding, FY2002-FY2011
(millions of then-year dollars; totals may not add due to rounding)

| | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | Total thru FY11 |
|--|------|-------|--------------|--------------|--------------|--------------|-------------------|-------------------|-------------------|-----------------|
| Research, Development, Test & Evaluation, Navy (RDT&EN) account | | | | | | | | | | |
| Ship 1 construction (<i>qty</i>) | 0 | 0 | 206.7 (1) | 59.2 | 8.5 | 0 | 0 | 0 | 0 | 274.5 |
| Ship 2 construction (<i>qty</i>) | 0 | 0 | 16.0 | 207.1 (1) | 55.0 | 0 | 0 | 0 | 0 | 278.1 |
| Ships 1 and 2 outfitting/post delivery | 0 | 0 | 0 | 8.7 | 36.7 | 36.8 | 7.1 | 0 | 0 | 89.3 |
| LCS ship development | 35.3 | 160.1 | 228.0 | 86.0 | 57.0 | 60.3 | 43.2 | 43.9 | 22.4 | 736.2 |
| LCS mission package project (<i>qty</i>) | 0 | 0 | 0 | 213.0 (3) | 162.3 (1) | 90.4 | 82.5 | 100.1 | 40.8 | 689.2 (4) |
| Subtotal RDT&EN | 35.3 | 160.1 | 450.8 | 574.0 | 319.6 | 187.6 | 132.8 | 144.1 | 63.2 | 2067.3 |
| Shipbuilding and Conversion, Navy (SCN) account | | | | | | | | | | |
| Ships 3-27 construction (<i>qty</i>) | 0 | 0 | 0 | 440.0 (2) | 520.7 (2) | 947.6 (3) | 1764. 3 (6) | 1774. 2 (6) | 1825. 4 (6) | 7272.3 (25) |
| Outfitting & post delivery | 0 | 0 | 0 | 0 | 13 | 37 | 70 | 95 | 122 | 337 |
| Subtotal SCN | 0 | 0 | 0 | 440.0 | 533.7 | 984.6 | 1834. 3 | 1869. 2 | 1947. 4 | 7609.3 |
| Other Procurement, Navy (OPN) account (for LCS mission packages) | | | | | | | | | | |
| Subtotal OPN (<i>qty</i>) | 0 | 0 | 0 | 40.1 (0) | 79.1 (1) | 207.6 (3) | 652.3 (13) | 656.2 (12) | 720.2 (15) | 2355.5 (44) |
| Weapons Procurement, Navy (WPN) account | | | | | | | | | | |
| Subtotal WPN | 0 | 0 | 0 | 0 | 0 | 12.5 | 39.1 | 91.0 | 134.2 | 276.8 |
| TOTAL | 35.3 | 160.1 | 450.8 | 1054. 1 | 919.3 | 1355. 3 | 2588. 5 | 2665. 6 | 2743. 0 | 12308.9 |

Source: Navy Office of Legislative Affairs, March 6 and April 17, 2006.

Cost Cap On Fifth and Sixth LCSs. Navy officials have stated to CRS that the fifth and sixth LCSs will meet the legislated cost cap of \$220 million per ship because the hands-on construction cost of the ships, when adjusted for inflation, fall within the \$220-million figure.³ The Navy's explanation suggests that the Navy is interpreting the LCS cost cap as something that applies to the hands-on construction cost of the ship, rather than to the larger procurement cost of the ship as it appears in the budget, which includes costs for other items, such as Navy program-management costs and allowance for

³ Source: Information paper provided to CRS by Navy Office of Legislative Affairs, Apr. 3, 2006.

changes. The LCS cost cap (Sec. 124 of H.R. 1815/P.L. 109-163) refers to “the total amount obligated or expended for procurement of the fifth and sixth vessels....” Potential oversight questions for Congress include the following:

- Does the Navy’s apparent interpretation of the meaning of the LCS cost cap mean that the Navy will interpret the Virginia-class submarine and DDG-1000 (formerly DD(X)) cost caps (Secs. 121 and 123 of H.R. 1815/P.L. 109-163) the same way, so as to exclude budgeted costs other than the actual hands-on construction costs of the ships?
- Is the Navy’s apparent interpretation of the LCS cost cap consistent with how the Navy interpreted past legislated cost caps on ships such as the Seawolf-class submarines and the aircraft carrier CVN-77?

Table 2. Estimated LCS Sea Frame Unit Procurement Costs In FY2006 and FY2007 Budget Submissions

(Costs in millions of then-year dollars)

| | FY07 | FY08 | FY09 | FY10 | FY11 | FY09-11 |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| <i>FY2006 budget submission</i> | | | | | | |
| Total procurement cost | 542.4 | 779.7 | 1,127.2 | 1,112.3 | 1,110.3 | 3,349.8 |
| Number of ships | 2 | 3 | 5 | 5 | 5 | 15 |
| Unit procurement cost | 271.2 | 259.9 | 225.4 | 222.5 | 222.1 | 223.3 |
| <i>FY2007 budget submission</i> | | | | | | |
| Total procurement cost | 520.7 | 947.6 | 1,764.3 | 1,774.2 | 1,825.4 | 5,363.9 |
| Number of ships | 2 | 3 | 6 | 6 | 6 | 18 |
| Unit procurement cost | 260.4 | 315.9 | 294.1 | 295.7 | 304.2 | 298.0 |
| % change in unit procurement cost, FY07 compared to FY06 | (4%) | 21% | 30% | 33% | 37% | 33% |

Source: Prepared by CRS using Navy data from FY2006 and FY2007 Navy budget submissions.

Total Program Acquisition Cost. Although this CRS report estimates that a 55-ship LCS program might have a total acquisition cost of more than \$26 billion, the potential total acquisition cost of the LCS program is uncertain. Supporters could argue that total program acquisition cost will become clearer as the Navy works through the details of the program. Critics could argue that a major acquisition program like the LCS program should not proceed at full pace until its potential total costs are better understood.

Acquisition Strategy. The Navy’s acquisition strategy for the LCS program remains unclear in terms of the date when procurement will shift from the current Flight 0 designs to one or two modified Flight 1 designs; the future division of work between the Lockheed-led and GD-led LCS teams, and how this division will be determined; and whether the Navy at some point will decide to downselect to only one industry team. Observers have also expressed concern about the degree of coordination between procurement of LCS sea frames and development and procurement of LCS mission packages.

Mission Modules Funded in OPN Account. Table 1 suggests that the Navy’s plan to procure LCS mission packages in the Other Procurement, Navy (OPN) account may result in more than 20% of the LCS program’s total acquisition costs being funded

through this account. Supporters could argue that this is consistent with the practice of procuring ship weapons through the Weapon Procurement, Navy (WPN) appropriation account or the Procurement of Ammunition, Navy and Marine Corps (PANMC) appropriation. Skeptics could argue that the LCS mission packages are not missiles and gun shells, but rather elements of the ships' combat systems, and that funding the packages through the OPN account rather than the ship-procurement (SCN) account would effectively obscure a significant portion of total LCS program procurement costs.

Potential Options for Congress. Potential options for Congress for the LCS program include the following:

- approve the program as proposed by the Navy;
- use a block-buy contract for LCSs procured during the five-year period FY2007-FY2011;
- shift procurement of LCS mission packages to the SCN account;
- shift production of some LCSs to one or both of the Navy's two cruiser-destroyer construction shipyards — General Dynamics' Bath Iron Works (GD/BIW) of Bath, ME, and Northrop Grumman Ship Systems (NGSS) of Pascagoula, MS, and New Orleans, LA — to provide more work for one or both of these facilities;
- procure a few LCSs and then evaluate them in exercises before deciding whether to put the LCS into larger-scale series production; and
- terminate the LCS program and invest more in other littoral-warfare improvements.

Legislative Activity for FY2007

FY2007 Defense Authorization Bill (H.R. 5122/S. 2766). The House and Senate Armed Services Committees, in their reports (H.Rept. 109-452 of May 5, 2006, and S.Rept. 109-254 of May 9, 2006, respectively) on the FY2007 defense authorization bill (H.R. 5122/S. 2766), recommended approval of the \$521 million requested for procuring two LCSs, and expressed concerns about the program. **The House report** stated:

The committee is concerned about the uncertainty in the Navy's acquisition strategy for the Littoral Combat Ship (LCS).... How long the Navy intends to continue with two separate designs for these vessels remains unclear. The committee believes that it is also unclear when the Navy will place this program into the discipline of the normal acquisition process with definitive and mature requirements and Director, Operational Test and Evaluation, review before continuing with procurement.... the committee encourages the Navy to develop an acquisition strategy for the long-term that clarifies any ambiguity in the current build profile. The committee further encourages the Navy to downselect to one of the two LCS variants currently in procurement in order to achieve economy of scale, or present a compelling case to the congressional defense committees on why both variants should be procured. (Page 69)

The Senate report stated:

The construction of lead LCS vessels at two shipyards inherently adds cost risk, which will persist until these ships near completion in 2007 and 2008....

The committee views LCS as an important component of the Navy's strategy for conducting the global war on terror, and has supported the Navy's approach to rapidly field this capability. The design and construction of LCS in parallel with development of the mission modules requires heightened management of program risk to ensure affordable, full mission capability of the LCS program. However, the committee is concerned that the affordability appeal of the LCS program is being overtaken by apparent cost growth, and that the rapid ramp up in LCS procurement will compound the issue. The stated emphasis on affordability is obscured by the absence of a clear acquisition strategy to guide strategic program decisions. Additionally, it is unclear that the Navy has assessed the added cost for training, maintenance, configuration management, planning and engineering, and supply support for the two flight 0 ship classes. Further, by virtue of budgeting the costs for procuring the flight 0 LCS vessels in three different appropriations, total costs for the program's start are difficult to discern.

In view of these concerns, the committee directs the Secretary of the Navy to submit a report on the LCS program, no later than December 1, 2006 to the congressional defense committees. The report shall outline the Navy's acquisition strategy for the program, including the competition plan, the flight strategy, and the cost containment strategy for the program; contain a clear representation of all R&D and procurement costs for the total program; and assess the added life cycle costs associated with operation and support for two dissimilar flight 0 LCS designs. (Page 113)

FY2007 Defense Appropriations Bill (H.R. 5631). The **House Appropriations Committee**, in its report (H.Rept. 109-504 of June 16, 2006) on H.R. 5631, recommended approval of the \$521 million requested for procuring two LCSs (page 141). The **Senate Appropriations Committee**, in its report (S.Rept. 109-292 of July 25, 2006) on H.R. 5631, recommends funding the procurement of one LCS (rather than two) in FY2007, and rescinding funding (in Section 8043) for one of the three LCSs procured in FY2006 (pages 114, 115-116, and 230-231). The Senate report stated:

With the fiscal year 2007 budget submission... the Navy revealed the LCS unit cost estimate used as a basis for last year's appropriation was exclusive of contract change orders, planning and engineering services, program management support and other costs not included in the ship construction contract. The Congressional Research Service estimates these adjustments would increase the average unit cost of LCS ships about 33 percent, to approximately \$300,000,000. As a result, the Navy is unable to procure both the third and fourth LCS flight 0 ships without the availability of additional funding. The Committee is troubled by this revelation and recommends rescinding the insufficient fiscal year 2006 funds currently allocated to the fourth LCS flight 0 vessel.

The Committee is further troubled by reports that the first two LCS flight 0 ships under construction are exceeding their cost as previously budgeted. In last year's report, the Committee reminded the Navy that "the appeal of the LCS is its relative simplicity of design and low cost." The Committee believes cost growth and design changes are jeopardizing the affordability appeal of LCS. As a result, the Committee believes the fiscal year 2007 budget request is insufficient to procure two ships and recommends \$300,670,000 to fully fund procurement of one LCS seaframe, which is a reduction of \$220,000,000 and one seaframe from the request. The Committee notes that this recommendation puts the Navy on its previously established path of procuring four LCS flight 0 ships by the end of fiscal year 2007. (Pages 115-116)